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Interface bureaucrats and the everyday remaking of climate interventions: Evidence from climate change adaptation in Zambia

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ABSTRACT

When climate change policies are implemented in practice, they travel through the hands of a range of practitioners who not only mediate but also potentially transform climate interventions. This article highlights the role of a group of actors whose practices have so far received little attention in the study of climate change governance, namely the public servants who are responsible for the everyday implementation of national climate change policies and associated programmes on the ground. Situated at the frontline of the state and often engaging directly with citizens, these "interface bureaucrats" occupy a complex position in which they must balance their role as representatives of the state with the need to accommodate the pressures, interests and practical challenges associated with everyday policy implementation. In this article we examine how interface bureaucrats in Zambia seek to navigate this role as they go about implementing national climate change adaptation policies in practice, and what this means for the nature and outcome of these interventions. We identify key dilemmas of the interface bureaucrats in our study areas, namely (i) intervening with limited reach, (ii) implementing generic policies, and (iii) managing conflicting interests. We show how they address these dilemmas through highly pragmatic practices involving informal agreements with community members, discretionary adjustments of official policies, and negotiation of contested interventions. As a result, the nature and outcomes of climate change adaptation interventions end up differently from the official policies and the underlying governance interests of the central state. Our findings suggest a need for greater attention to the role of interface bureaucrats as everyday climate policy makers and point to the significance of pragmatism and compromise in the interaction between state actors and citizens in environmental interventions.

1. Introduction

Studies of climate governance often focus on the high politics of international diplomacy, or on the development of democratic mechanisms for popular engagement. While this is obviously important, equal attention is needed to understand the less conspicuous everyday dimensions of climate governance. This includes the seemingly mundane practices of the numerous local public servants who, around the world, are charged with the day-to-day implementation of climate change policies and programmes. How do these practitioners seek to make climate interventions "work" in real-world settings, how do they address the dilemmas and constraints of everyday implementation, and how do their discretionary choices and interactions with the public affect the outcomes of climate policies and programmes?

Examining these questions can help provide insights into how global and national climate agendas are internalized and reconfigured by implementing organisations as they go about turning agreements and plans into reality. Here we focus particularly on the subnational implementation of national climate policies and programmes. Despite the burgeoning interest in subnational climate action, little is known about the informal ways in which subnational actors influence and reshape climate agendas and their outcomes (Huitema et al., 2018).

One group of public servants who have so far received little attention in climate governance are the "street level bureaucrats" (Lipsky, 2010) or – as we will refer to them here - "interface bureaucrats" (Olivier de Sardan, 2014) who implement government policies, services and laws in local settings on an everyday basis. These local planners, managers, technical experts and extension workers typically occupy a complex position at the interface between public institutions and citizens. They are expected to implement complicated and sometimes unpopular policies with limited resources, while at the same time maintaining public legitimacy and a sustained ability to operate. At first

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sight, such interface bureaucrats may appear to be little more than the extended arm of their parent ministries and national policy makers. In practice, however, the nature and context of their work positions them as potentially significant actors in translating and shaping the implementation of public policies and programmes on the ground.

This raises the question of how the particular position of interface bureaucrats – and their efforts to navigate it - affects the implementation of climate policies and programmes in practice. While we believe this question is of universal relevance, its particular manifestations must be explored through a situated analysis (Huitema et al., 2016; Thorpe and Figge, 2018). Here, we focus on the African context and examine how climate change adaptation policies and programmes are implemented in Zambia.

Drawing on insights from public administration studies, development studies and anthropologies of the state, we first discuss the role of interface bureaucrats in the governance of climate change adaptation. We argue that interface bureaucrats must be understood as a distinct group of state actors who are on the one hand engaged in the work of making people and resources "governable", but who also draw on pragmatic and discretionary practices in order to negotiate the dilemmas of everyday implementation. We then investigate how this affects the nature and outcomes of climate change interventions in the Zambian context. We discuss the political context of climate change adaptation in Zambia, and identify three key dilemmas of local interface bureaucrats, namely (i) intervening with limited reach, (ii) implementing generic policies and (iii) managing conflicting interests. We show how interface bureaucrats seek to address these dilemmas by (a) informally delegating implementation to community members; (b) staging official project activities whilst discretely nurturing alternative approaches; and (c) seeking negotiated solutions to contested interventions. As a result, climate change adaptation interventions are reshaped by interface bureaucrats and other actors and turn out differently from the original policies and vested political interests.

The contribution of our study is thus to highlight the role of interface bureaucrats as significant actors in (re-)shaping climate change adaptation policies and programmes in African settings and beyond, and to draw attention to their informal practices and everyday interactions with other actors. We suggest that greater attention to these features can add new dimensions to both research and policy development in the field of climate governance.

2. The role of interface bureaucrats in climate change interventions

Our focus in this article are the public servants who implement the growing number of climate change adaptation policies and programmes at subnational levels in the rural areas of African countries (in the following we use "climate change adaptation" and "adaptation" interchangeably). These actors may include local planners and managers, technical subject matter specialists, field-based extension workers and other staff working on agriculture, water, fisheries, forestry, environment, disaster management, community development, etc. Based at district or similar administrative levels, they are typically employed in local branches of the central state, or in the executing sections of local governments. Our emphasis here is on the former, i.e. the staff who work in the local state agencies, understood as the deconcentrated or otherwise decentralized branches of central state ministries, who are key implementers of climate change adaptation policies in many countries of the Global South.

Such staff form part of a broader group of public servants who, around the world, represent the frontline of public institutions in local settings, and interact regularly with citizens as they go about implementing national policies, services and laws on the ground. In public administration literature, Lipsky famously termed such actors "street level bureaucrats" and showed how they seek to overcome the dilemmas of everyday implementation by developing their own interpretations and discretionary practices to the extent that they became significant policy *makers* in their own right (Lipsky, 2010; Sevä and Jagers, 2013; Weatherley and Lipsky, 1977).

Lipsky's work, and the literature that developed from it, has mainly focused on the western context. However, similar insights have recently emerged from anthropological studies of the everyday state in African bureaucracies, which have highlighted how local state representatives develop semi-autonomous norms and routines alongside official procedures (Bierschenk and Olivier de Sardan, 2014; De Herdt and Olivier de Sardan, 2015). Echoing earlier studies of development interventions (Long, 2001), this literature emphasizes the dynamic nature of the interface between local state actors and the citizens around them (Blundo and Le Meur, 2009). In order to emphasize this point, we adopt here the term "interface bureaucrats" (Olivier de Sardan, 2014) as our preferred term for the subjects of our study, i.e. the frontline workers of public institutions who engage with citizens on a regular basis through the local execution of public policies, services and laws.

How should we understand the "work" that such interface bureaucrats do in the context of climate change adaptation specifically? Charged with the local implementation of government policies and programmes, their formal roles in climate change adaptation typically involve extension activities to communities, managing everyday implementation, and monitoring and reporting on progress. They also have direct and indirect influence on adaptation through preparation of local sector plans and budgets, regulation of natural resource use and access, technical input to local governments, and approval of civil society projects and community activities. The everyday decisions attached to this work are in themselves expressions of governance, involving as they do a regulation of access to benefits and resources, and imposing direct or indirect restrictions and sanctions on behavior.

More fundamentally, as frontline representatives of the central state, the work of interface bureaucrats also forms part of the broader process of making people and territories governable in the first place. Past work on the role of the state in development has highlighted the emphasis of state bureaucracies on mapping and sedentarising populations and their land use, as a means of making them administratively "legible" and manageable (Scott, 1998, 2017). Others have pointed to the subtle ways whereby local state actors take part in constructing the idea and legitimacy of the state (Gupta, 2006), and produce assemblages that facilitate and justify external intervention in local livelihoods (Li, 2007a, 2007b). Green interventions are obvious arenas for such practices, focusing as they do on fundamental aspects of production, land use and livelihoods (Death, 2016).

The work of interface bureaucrats is thus clearly associated with the ongoing production of the material and discursive manifestation of state authority. Yet this is no straightforward undertaking. Firstly, interface bureaucrats are typically charged with carrying out interventions that have been conceived and devised elsewhere - e.g. by higher tiers of government and/or multilateral organisations. Ongoing adjustment is therefore required to make interventions "implementable" in local circumstances. Secondly, in order to intervene interface bureaucrats must continuously engage with and manage daily relations with the citizens who are the targets of their work, as well as other actors who are involved in or affected by the intervention in question. Research on planned interventions and policy translation has shown that these are complex social processes in which implementers and beneficiaries not only struggle over, but also negotiate and coproduce the nature and outcomes of interventions (Long, 2001; Mosse, 2005; Mukhtarov, 2014).

Thirdly, interface bureaucrats rarely operate with sovereign power. In practical terms, the resources with which they are expected to act typically fall short of their needs. Moreover, interface bureaucrats in the Global South often work in a context of institutional multiplicity, where authority is fragmented and subject to competition from e.g. customary institutions, local governments, other state agencies, community organisations and NGOs (Ribot, 2007). These may oppose the interventions

of local state agencies, and compete with them over service provision, authority and even "stateness" itself (Lund and Boone, 2013).

For interface bureaucrats the implementation process is thus fraught with limitations and dilemmas that complicate their tasks of rolling out policies and making people and territories governable. This position is constraining in some respects, but also affords room for agency. The discretion left to local public servants allows them to apply their own interpretations of policies and interventions, and to develop self-crafted solutions to the challenges and dilemmas of implementation (Diarra and Ousseini, 2015; Lipsky, 2010; Weatherley and Lipsky, 1977). While such actions may seem ad hoc, they are often supported by underlying "practical norms" which regulate the unofficial practices of interface bureaucrats in a given location, such as those documented in African bureaucracies (De Herdt and Olivier de Sardan, 2015; Olivier de Sardan, 2015). Such practical norms do not replace the official or wider social norms of behavior but are interweaved with them. The institutional multiplicity that often characterizes rural African settings furthermore provides interface bureaucrats with opportunities to craft unofficial alliances and hybrid arrangements between state and non-state institutions on service delivery and everyday governance (Kyed, 2017).

We suggest, then, that interface bureaucrats must be examined as a distinct group of state actors in climate change adaptation interventions, whose behavior cannot be predicted solely by studying the policies or underlying political interests at other levels of scale. Instead a more composite perspective is needed: On the one hand, interface bureaucrats are engaged in the business of extending the reach and idea of the state, while on the other hand they must continuously navigate the conditions and challenges associated with the implementation of adaptation interventions in real-world settings.

3. Methodology

Methodologically, understanding the role and agency of interface bureaucrats requires a multi-facetted "thick" analysis (Adger et al., 2003). Research for the current article was conducted in Zambia during the period 2012–2016, at the national level and in two rural districts. It involved the following main tasks:

- A background study of the political context and evolution of climate change interventions in Zambia, drawing on interviews, existing literature and archival research. This allowed us to identify underlying political agendas and interests in climate change adaptation policies.
- Qualitative semi-structured interviews and re-interviews aimed at exploring (i) the perceptions and everyday work life of interface bureaucrats in the study districts, (ii) their perceived implementation dilemmas, and (iii) how they sought to address them. This involved interviewing (a) the interface bureaucrats themselves, i.e. extension workers, technical specialists, senior officers and other staff in local state agencies, some of whom became key informants, and (b) other local actors including community members, local government staff, NGO workers and customary authorities.
- Process studies (Langley, 1999) of how government climate change adaptation interventions in the study districts have evolved in detail and over time. This was charted through further in-depth interviews with the involved interface bureaucrats, community members, other actors and observers. The method allowed us to examine the practices and interactions of interface bureaucrats in interventions from both a diachronic and synchronic perspective, and provided a means to triangulate information on their actions through multiple sources. We first traced the overall evolution of climate discourses and interventions in the study area since 2005, and then conducted in-depth studies of the trajectories of the three major government climate interventions in the area, namely climate resettlement, conservation agriculture, and resilient livestock production. Recent additional interventions are not covered in this article.

A total of 59 individual qualitative interviews and five focus group interviews were conducted for the purposes of this article. The research was further informed by a quantitative survey of 200 households, examining household involvement and perceptions vis-a-vis government adaptation interventions in the study area. It should be noted that the current article is focused on the role of interface bureaucrats, and community agency will therefore mainly be discussed in connection to this.

4. The politics of climate change adaptation

Climate change adaptation deals with fundamental aspects of human livelihoods, production and resource access. This makes adaptation interventions deeply political and connects them not only to global discourses and governance, but also to national struggles over resource control and state formation (Eriksen et al., 2015; Nightingale, 2017; Taylor, 2014). In Zambia, multilateral and bilateral donors and international NGOs have had significant influence on the emergence of the climate change discourse and its associated policy framework. Throughout the 1990s and 2000s, new plans and policies on disaster management were funded and assisted by donors and international relief organizations. Since the mid-2000s this was complemented by the emergence of a range of donor-funded climate change adaptation projects, and adoption of Zambia's first National Adaptation Programme of Action (NAPA) in 2007. Climate change adaptation was subsequently mainstreamed into national development plans and features prominently in Zambia's Intended National Contribution (INDC) to the 2015 Paris Agreement on climate change. Despite decreasing government dependence on aid budgets in recent decades, virtually all major disaster and climate change adaptation policies, plans and programmes initiated by the Zambian government have been funded and technically supported by multilateral or bilateral donors.

Climate change adaptation interventions in Zambia do not, however, only represent donor agendas. They must also be understood in the context of a historical process whereby the Zambian state has sought to govern and extended its legitimate power in rural areas. State efforts to steer and modernize local agricultural practices are thus longstanding. In colonial times, much of Zambia served as a labour reserve for mining activities and the settler economies elsewhere in the region. The colonial administration therefore promoted maize production to feed the labour force, in place of more conventional crops (Sitko, 2008). A related interest was to ensure that labour remained could be re-absorbed in communities of origin during economic recessions. This prompted measures to enhance smallholder agriculture and diversify livestock economies in areas prone to drought, floods and disease (Crehan and Oppen, 1988).

Following Zambia's independence in 1964, agricultural policies gradually shifted from initially socialist to latterly more market-based approaches, but an underlying modernization ethos has prevailed. This has included policies to discourage shifting cultivation practices, sedentarise pastoral production, establish voluntary settlement schemes, introduce new farming techniques, promote cash crops and expand private land tenure in communal lands (Moore and Vaughan, 1994; Sitko and Jayne, 2014; Smith, 2004). This modernization logic is also reflected in the policies and plans that constitute the current framework for climate change adaptation and disaster management measures. Below we discuss interventions that aim to resettle communities as a response to flood hazards, replace existing cultivation practices with "climate smart" agriculture, and introduce climate resilient commercial livestock production.

Adaptation interventions can thereby be seen as an avenue for Zambia's central state agencies to carry forward long-standing efforts to make rural areas "governable" through the ordering of livelihoods, production and land use. Significantly, this takes place in a context

where state agencies have limited physical reach, and where their authority is fragmented and subject to competition from other local institutions (see below). In this context, adaptation interventions serve as an opportunity to assert the authority of the state as a legitimate actor in resource control and service provision (Funder et al., 2018). Adaptation interventions in Zambia are thus in part the product of global norms and discourses around climate change, mediated through international climate frameworks, donors and NGOs - but they are also a potential vehicle for the central state to affirm its role in the governance of rural areas. Studies suggests that this is also happening elsewhere (Arnall, 2014; Lindegaard, 2018; Ojha et al., 2015). The question remains, however, what happens when interface bureaucrats are required to implement these interventions in practice?

5. The implementation context

Our study sites consist of two rural districts in southern and western Zambia respectively. The districts have been anonymized, given the informal nature of the staff practices that we describe. Both are relatively sparsely inhabited with limited infrastructure. The economy is characterized by smallholder farming, pastoral transhumance (i.e. seasonal movement of livestock) and artisanal fishing, practiced mainly by Tonga and Lozi ethnic groups. Poverty rates and food insecurity are high. The areas are considered highly climate vulnerable due to a combination of frequent flooding, droughts, erratic rainfall and rising temperatures.

The interface bureaucrats charged with implementing climate change adaptation in these areas are attached to the deconcentrated branches of their respective parent ministries, with offices in the respective district headquarters. Much of the work related to climate change adaptation is carried out by staff in the departments of Agriculture, Water Affairs and Community Development. The staffing of these agencies typically consists of field-based extension workers, technical specialists, and a senior officer in charge of planning and upward reporting.

The district agencies experience highly restricted budgets and a chronic shortage of staff. Senior officers submit annual work plans and budgets to provincial offices, who approve and coordinate plans with national policies. Approved workplans are very rarely funded in full, sometimes with as little as 10–25% of the estimated cost. Extension workers are based in field camps but must cover vast areas with extremely sparse infrastructure, and their physical reach is constrained by logistical issues such as lack of fuel for motorbikes. Some areas are visited only once annually by extension workers, if at all. Donor funded projects provide an opportunity to overcome some of these constraints, but also impose management and monitoring requirements of their own. Meanwhile, expectations to deliver results remain.

The operations of district level staff furthermore take place in a contested institutional landscape. During the 1970s and 1980s Zambia's central government exercised a relatively strong and direct control of local politics through the party structure, but with the fall of the country's first president Kenneth Kaunda in the 1990s a far more fragmented picture emerged (Gould, 2010). This includes the revival of a long-standing struggle over power and authority between chiefs and the central state, fought out in a variety of domains including land control and community development (Haller, 2012). At the same time, local governments are seeking to carve out a greater role for themselves vis-à-vis the central state and are pushing for implementation of the country's long neglected decentralization policy. A range of national and international NGOs are also active in the districts. With their access to funding and technical knowhow they potentially threaten the legitimacy of local state agencies as knowledge specialists and development leaders.

Land use and access to natural resources is furthermore contested. Water, pasture and fertile land are scarce resources and subject to ongoing disputes within and between communities. Large-scale commercial agriculture remains little developed so far, but an increase in private land investments in communal lands is a growing concern in local political discourses. Government service provision is also questioned: MPs, local government councilors and community organisations often and openly challenge the direction of agricultural extension activities, water provision, and community development projects. A frequent argument is that government policies should focus less on telling communities what to do, and more on providing devolved funding and basic services.

It is this contested environment that interface bureaucrats must navigate as they seek to implement government adaptation policies and programmes in our study area. In order to understand how they deal with this, we focus here on three key dilemmas that they face, namely (i) intervening with limited reach, (ii) implementing generic policy and (iii) managing conflicting interests. The dilemmas – understood here in the broad sense as a difficult or persistent problem - were distilled from key themes that emerged in our interviews with interface bureaucrats, and named by us. In the following we discuss these challenges and how interface bureaucrats deal with them dilemmas and illustrate this through specific adaptation interventions.

6. Intervening with limited reach

A persistent problem for local state agencies in Zambia is how to carry out adaptation interventions with limited means and authority. The scant staff and budgets mean that extension workers are unable to visit communities regularly, and cannot in practice conduct the everyday management and monitoring of adaptation activities that they are responsible for. Moreover, in a context of fragmented institutional authority, state-led adaptation activities cannot merely be imposed on households. Not only do interface bureaucrats lack the resources to do so, but they also know from experience that it will backfire. If forced too much, community members will exercise "foot dragging" (Scott, 1985), or turn to competing institutional actors such as chiefs, NGOs or local government staff - thereby undermining the authority of state actors. As one agricultural officer put it: "You cannot force them […] they will stop cooperating."

Instead, interface bureaucrats working on adaptation seek to practice the art of governing through communities (Li, 2007a; Rose, 1996). Working with community organisations is par for the course and fully formalised in all adaptation projects in our study areas. For interface bureaucrats, however, there is more to community organisations than just a handy means of organising popular engagement: They also provide an important means of addressing the difficult work of making people and territories governable with limited reach and resources. In the following we illustrate this through the trajectory of a flood resettlement scheme in one of our study areas.

Climate induced resettlement is currently under development as a "last resort" measure within the UN Framework Convention for Climate Change (UNFCCC), but a number of governments are already implementing such measures independently of UN efforts (Lindegaard, 2018; Mortreux et al., 2018). In Zambia, extreme floods on the major rivers and tributaries have led the central government to experiment with small-scale, voluntary relocation of flood-prone households as a climate change adaptation measure. For central state agencies such as the national disaster mitigation agency and the ministries of agriculture and community development, resettlement not only reduces the need for repeated emergency- and flood damage relief. It also provides an opportunity to re-organize dispersed households and their resource use into a manageable, spatially bounded area, thereby facilitating service delivery and promotion of new land use and farming practices in line with government policies (Funder et al., 2018).

In our study areas, one such resettlement scheme has sought to voluntarily relocate flood prone households to a dedicated and previously unsettled area some 20–30 km s from their original homes. Although initiated by the central government, day-to-day

implementation of the scheme has been left to the local state agencies working in agriculture, water and community development. Initially, staff in these agencies were enthusiastic about the scheme, but it soon became apparent that little funding would be provided from the central level. This made it difficult for local state agencies to provide basic services such as agricultural extension, boreholes, clinics and schools. In addition, official title deeds to land in the resettlement area – an important incentive for households to relocate – proved slow and cumbersome to obtain from provincial and central authorities. These shortcomings caused frustration and complaints among resettled households.

In response, staff in the implementing local state agencies developed an informal working relationship with a community organisation in the area, to whom they unofficially delegated key tasks. The organisation, led by leading members of resettled households, were thus asked to take over key tasks such as identification of flood-prone households in other communities, assessment of their vulnerability, and temporary land allocation in the resettlement area. Through informal meetings, extension workers and members of the community organisation worked out pragmatic principles for how these tasks were to be carried out. For example, an informal land administration system was developed which allowed households to resettle and employ new land whilst waiting for official title deeds to come through. With the assistance of the extension workers and senior officers, the community organisation furthermore made contact with NGOs to support community development projects in the area. These arrangements appeased the protests of resettled households.

Over time and with the active support of extension workers, the committee of the community organisation has evolved to become the main *de facto* governing body for the resettlement area at community level. For staff in the local state agencies, this has several advantages: It has reduced their workload, calmed frustrations among resettled households, and facilitated administration of the resettlement area. However, there is also a cost. As a result of the arrangement, staff in the local state agencies have limited control over the community organisation's own discretionary actions. This has had unexpected consequences. Most significantly, members of the community organisation have allowed households to obtain land in the resettlement area without actually abandoning their old, flood-prone homes and land. This is in direct contrast to the original aims of the resettlement scheme but has several benefits for households. It increases their land capital and allows them to hold land under two different tenure systems – i.e. communal land in their original home and leasehold land in the resettlement area. In a context of growing uncertainty about land rights, households see this as a means of spreading tenure risk. Households further exploit this by spreading their harvest over the old and new land plots. Relocated fishermen have taken up crop cultivation in the resettlement scheme, but still practice seasonal fishing in their old home, thus diversifying their income base.

Households thereby employ the resettlement area as a means to increase land access, reduce risk and diversify production. This makes good sense from an adaptation perspective but is a rather different outcome than the original aim of reorganizing communities in a spatially bounded, manageable area. Initially staff in the local state agencies were frustrated at this development but have come to accept it as a necessary consequence of their arrangement with the community committee, and an acceptable means of avoiding further controversy over the scheme.

The resettlement scheme thus illustrates how interface bureaucrats employ informal delegation to community members as a means to overcome the challenge of implementing with limited reach. This not only solves an immediate resource problem for interface bureaucrats, but potentially reduces resistance. In principle, community members thereby come to discipline themselves *á la* Foucault (Foucault, 2007; Rose, 1996). Yet in practice, things are not so straightforward. The delegation of activities comes at a price. Firstly, it makes interface bureaucrats partially dependent on the community actors with whom such arrangements are made; and secondly, it leaves room for community members to act otherwise. This opens space for compromise and negotiation in how adaptation actually takes place and can lead to unexpected outcomes.

7. Implementing generic policies

Lipsky discussed how a common challenge for local public servants is the task of implementing policies and plans based on universalising assumptions that do not match local realities (Lipsky, 2010; Zenker, 2018). A recurring complaint during our interviews with interface bureaucrats was that the policies and programmes they were supposed to implement were unrealistic desk exercises that did not consider the local reality. They often found themselves having to implement and show results on policies that they considered inappropriate in their context.

This concern was rarely an expression of idealistic notions that indigenous knowledge was better than state intervention. Most staff we interviewed felt that their professional knowledge was superior. However, exactly because expert knowledge is a key aspect of their identity and local legitimacy, technically inappropriate policies not only frustrates them, but also threatens to undermine their authority as technical experts. As one agricultural officer put it: "When everyone can see I am just plain wrong, how are they going to believe me next time?" In a context of fragmented institutional authority, expert knowledge is an important asset for interface bureaucrats, and a major element in their claim to legitimately intervene through adaptation activities as state actors.

Implementing obviously inappropriate policies thus requires staff in the local state agencies to on the one hand show results to central and provincial levels and avoid discrediting the state as a policy maker, while at the same time minimizing damage to their public and personal legitimacy as technical experts. To handle this, agricultural staff in the area seek to stage activities that satisfy the priorities in national policies, whilst discreetly supporting other activities alongside.

One illustration of this is the way in which national policies and programmes to implement so-called Conservation Agriculture is implemented in our study areas. A key adaptation activity in Zambia's Nationally Determined Contribution under the 2015 UNFCCC Paris Agreement is the promotion of Conservation Agriculture (GRZ, 2015). This assemblage of farming practices evolves around minimizing soil disturbance, maintaining soil cover, and rotating crops. Because it potentially preserves moisture and nutrients and mitigates erosion, Conservation Agriculture is in principle well suited as a means of adaptation to harsher and more unpredictable environmental conditions.

Yet it is by no means a new approach in Zambian extension policy. As Whitfield has shown, promotion of Conservation Agriculture among small scale farmers in Zambia can be traced to the 1980s, and is the result of a discourse coalition involving the ministry of agriculture, donors, NGOs, and farmers' unions (Whitfield, 2016; Whitfield et al., 2015). For Zambia's central government, Conservation Agriculture has been a means of attracting donor investments for rural extension activities, and a way for agricultural and environmental state departments to address perceived land degradation and deforestation by smallholders, often with support from international environmental NGOs.

Yet for staff in the local agricultural agencies in our study areas, Conservation Agriculture provides an ongoing headache. Farmers are skeptical of the approach, claiming that it produces poor yields in the sandy soils common to this region of Zambia. Community organisations, headmen and local government councilors have thus criticized extension workers for experimenting with local livelihoods, and for failing to deliver on political campaign promises of conventional seed and fertilizer packages. Moreover, staff in the local agricultural agencies are themselves wary of the approach. While they recognize that it has merits in some settings, they agree with farmers that the

Conservation Agriculture approach is inappropriate in their particular context.

Agricultural staff therefore find themselves in the difficult situation of having to deliver results on a generic policy that they do not believe in, and which threatens their legitimacy as experts vis-à-vis other local institutional actors and communities. In order to address this, staff in the local agricultural agencies undertake a two-pronged approach which helps satisfy their superiors while at the same time promoting approaches that they themselves feel more comfortable with.

Liaising with influential community members – including representatives of community organisations and headmen – district agricultural staff have established Conservation Agriculture demonstration plots in selected communities, cultivated by voluntary "lead farmers". The official purpose of the plots is to showcase the advantages of Conservation Agriculture to other farmers. In reality they are effectively staged activities intended for other audiences: The plots allow the district agricultural agencies to report to higher administrative levels that, although uptake of Conservation Agriculture is low among farmers, at least something is being done. For the involved lead farmers, the demonstration plots are merely a sideshow alongside their main crop production in other fields. They are not particularly interested in the Conservation Agriculture techniques but benefit from the follow-on opportunities that come from interacting with government staff, e.g. the ability to request drought relief or obtain access to new seed varieties.

Alongside this, agricultural staff actively promote a range of other adaptation measures that they *do* believe in, based on their own practical experience. Extension workers only speak of Conservation Agriculture at occasional, specially organized events, and instead focus their regular extension work on other aspects of adaptation, such as the benefits of particular crops and new seed varieties. Likewise, whenever possible senior staff seek to encourage alternative approaches, drawing on the discretion vested in their roles as everyday managers. For example, some senior officers described how they sought as far as possible to allocate staff time and funds to activities that they felt were being underprioritized in national policy, or which could help overcome opposition from farmers. Others advised directly or indirectly against Conservation Agriculture methods at meetings with consultants from donor agencies or in conversations with NGO workers in their personal networks, suggesting alternative or additional adaptation practices instead. This is not always successful, but sometimes pays off. For example, some NGO projects originally intended to focus only on Conservation Agriculture but expanded their work to also focus on small-scale irrigation and horticulture projects.

These developments illustrate how interface bureaucrats in our study areas seek to sidetrack aspects of adaptation policies that they perceive as inappropriate, and which threaten their legitimacy as knowledge experts. In our study areas, this has resulted in a hierarchy of interventions among local agricultural staff, in which some are taken more seriously than others. Staged adaptation activities satisfy official policy priorities and programme documents and allow reporting on progress. The activities and actors involved are real and exist, but among local staff it is understood that other activities are more important. The involved community members are well aware of this, having long since learned to decipher the priorities of extension workers. They play along in pursuit of wider benefits, and thereby co-produce the staged activities.

Such practices echo the performance strategies of development workers in aid projects, who also seek to establish an image of projects proceeding as planned, whilst in reality deviating from what was intended (Mosse, 2005). In our study areas, interface bureaucrats actively promote alternative adaptation measures alongside the official priorities, by drawing on the discretionary space available to them, and the local personal networks of which they form part. Importantly, this is rarely done in direct contradiction to national policies. Most adaptation activities carried out by interface bureaucrats have some basis in national policy, but through their everyday work the priorities are sought adjusted or changed when necessary and possible.

8. Managing conflicting interests

When implementing adaptation policies, interface bureaucrats in Zambia must deal with a variety of actors with varying and often conflicting interests. Local governments, chiefs, CBOs and local politicians question and challenge interventions, or compete to benefit from them. Moreover, the interests of communities and individual households differ markedly according to a variety of factors such as livelihood strategies, wealth, political affiliations, natural resource endowments and exposure to climate hazards (Mweemba, 2018).

This complex landscape of interests poses a challenge for interface bureaucrats. On the one hand they must maintain local stability, avoid upsetting powerful local actors, and sustain the personal relationships through which they work. On the other hand, they must assert their own authority and implement adaptation activities that are often contentious and almost inevitably favour some interests while disregarding or obstructing others. This challenge is compounded by an emphasis in national and local political discourses – and in adaptation policies and programme plans - on broad stakeholder inclusion. While such principles can be manipulated, they cannot be ignored entirely. If this is done, local councilors, MPs and chiefs are quick to cry foul.

In order to deal with this challenge, interface bureaucrats in our study areas seek to (i) position themselves as facilitators who coordinate and align interests, and (ii) apply negotiated solutions when faced with major resistance. In the following we illustrate this through the application of adaptation measures in smallholder livestock production.

Zambia's National Adaptation Programme of Action (NAPA) identifies major risks to the country's cattle populations from intensified droughts and floods and rising temperatures (GRZ, 2007). To address this, the plan seeks to promote "improved" livestock management practices and introduce "well-adapted" livestock, e.g. new breeds and species (opcit. pp 20–21). The plan specifically links these activities to a national livestock programme aimed at enhancing productive efficiency, increasing the marketing of livestock and improving disease control. The plan thereby ties adaptation to a long-standing government aim of transforming smallholder livestock production towards a more efficient, market-oriented and sedentary mode of production. Behind this lies a perception in central state agencies that traditional livestock production systems are outdated and resist integration in the market economy.

Most staff interface bureaucrats in our study areas agree with these sentiments. An oft repeated narrative during our interviews was that customary livestock production practices made sense in the past but have become economically and ecologically unsustainable. As evidence, they refer to critical outbreaks of bovine pneumonia which decimated cattle populations in southwestern Zambia in the 2000s. Staff in the local agricultural agencies see uncontrollable movement of cattle as a major cause of these outbreaks, including seasonal transhumance practices and long-distance movement in response to drought. In this case, then, the national policy makes good sense for the involved interface bureaucrats. In practice they have sought to extend it by seeking to (i) replace transhumance practices with sedentary commercial cattle production, (ii) substitute cattle production in non-viable areas with goats, who are more drought tolerant, and (iii) support diversification into climate resilient crop farming. A variety of donor agencies and NGOs have helped fund these activities.

These are however controversial policies in a context where cattle-based pastoralism is not only a major source of livelihood, but also a key component in the cultural identity of many households. Local agricultural staff are well aware of this and employ a cautious approach. One staff member put it thus: "You know, certain people are always trying to make politics […] We have to step carefully. It's all about leading from behind." Local agricultural staff thus seek to

position themselves as facilitators who guide and coordinate rather than command. During extension activities and in meetings with communities, chiefs and NGOs, they emphasize that their role is to provide knowledge, coordinate action, and foster collaboration on livestock management and how it can adapt to climate change.

This strategy is rarely enough in itself however. Resistance to livestock policies have been particularly strong in areas populated by Lozi communities, where chiefs and headmen have responded with a counter discourse of indigenous knowledge. They argue that their pastoral practices have developed over centuries in response to seasonal flooding patterns, and that the state should not be telling them how to adapt or manage livestock. Behind this looms a larger political context: The Lozi identity as a "cattle-people" links to broader politics of ethnicity in Zambia, and to the contested role and authority of chiefs vis-à-vis the state. A long-standing discourse of Lozi secession from Zambia adds further to the sensitive nature of state interventions (Flint, 2003; Hogan, 2014).

In this context, local agricultural staff apply a differentiated approach to implementation of livestock related adaptation activities. When faced with forceful resistance from Lozi chiefs and communities, they hold back on efforts to curtail customary transhumance practices. Sedentary commercial livestock production is demonstrated, but only with households who show an active interest. A switch to goats and increased crop farming is mainly promoted among poor households, who are more interested as they rarely own much cattle. When livestock disease occurs, restrictions are agreed and cleared with chiefs. By contrast, in areas populated by Tonga households, the new policies have met with less resistance from chiefs and households. Here, the political context of livestock production is less contentious and opportunities for substituting cattle with goats is taken up more broadly among households. In these areas, local agricultural staff are more proactive in promoting sedentary livestock production and have imposed bans on livestock mobility in some areas without consulting with chiefs.

The implementation of the livestock policy and associated adaptation measures thus illustrate how interface bureaucrats in the area seek to manage conflicting interests, but also the necessary compromises that this involves. By presenting themselves as facilitators of adaptation, they seek to avoid making explicit claims to power, while still establishing their authority in adaptation. The facilitating role furthermore provides an opportunity to link otherwise opposing interests and actors under the common banner of "climate change adaptation". As Li has pointed out, the work of forging alignments between divergent interests is an important element in the crafting of discourses through which people and resources can be governed (Li, 2007a).

However, such measures are not always effective or sufficient, and resistance may persist. Where adaptation activities are strongly contested or create conflict between participating actors, interface bureaucrats in our study areas seek solutions that minimize conflict whenever possible - such as implementing official policy in one area but not in another or tweaking the nature of activities to gain broader consensus. This emphasis on negotiation rather than confrontation is well in line with the practical norms observed among local state actors in other African countries (Blundo, 2014). Importantly, it does not mean that interface bureaucrats give up efforts to govern, but rather that they attempt to do so by" working with the grain" from situation to situation. Yet exactly because it is negotiated, such an approach is co-produced and involves compromises. While most agricultural staff in our study areas support the national livestock policy, they must accept a piecemeal and negotiated implementation, which varies from setting to setting in intensity and effort according to what is pragmatically feasible and politically wise.

9. Discussion and conclusion

Critical research on climate change interventions in the global south has pointed to the vested political interests of international organisations and national governments. (Death, 2016; Fairhead et al., 2012; Nightingale, 2017; Taylor, 2014). Our findings support this. In Zambia, official climate policies and programmes are to a large extent a joint product of donor agendas and central state interests. The country's national adaptation policies and programmes should thus be understood as efforts to extend long-established attempts to manage populations, land use and production through settlement schemes, new agricultural technologies, and integration in market economies.

However, our findings add a further dimension to this analysis by emphasizing the significant role of interface bureaucrats, communities and other local actors as additional *de facto* co-producers of adaptation interventions. Specifically, we have shown how interface bureaucrats in Zambia employ highly pragmatic practices as they seek to navigate three key implementation dilemmas: Faced with the dilemma of how to implement adaption interventions with limited state reach, interface bureaucrats informally delegate responsibility and authority to selected community members. Seeking to address the dilemma of implementing generic policies, they stage project activities that appear to show progress, whilst discretely prioritizing other adaptation activities that they consider more appropriate. Lastly, they address the dilemma of managing multiple conflicting interests by assuming a facilitating role and seeking negotiated solutions.

The result is a local reshaping of climate change adaptation interventions, so that over time they turn out differently from both formally stated goals and underlying political agendas. A flood resettlement scheme aiming to re-orient livelihoods and land rights ends up being incorporated into autonomous community adaptation strategies; a Conservation Agriculture policy seeking to rationalize smallholder farming is sidelined in favour of other adaptation measures; and a policy aiming to sedentarise and commercialise livestock production is implemented on negotiated terms and in piecemeal fashion. These outcomes accommodate local actor interests differently and to a greater extent than intended in central state policies and are not necessarily as interface bureaucrats would have wished. However, they accept them as trade-offs in the ongoing balancing act that is their work.

The particular manifestation of such dilemmas, practices and outcomes will vary between settings, and clearly there are great differences in the political and institutional landscape within which interface bureaucrats operate (Chaudhury et al., 2016). At an overall level, however, our findings resonate with other recent studies of interface bureaucrats as they go about implementing environment- and natural resource policies in the African context (Blundo, 2014; Funder and Marani, 2015; Kairu et al., 2017). Common to these practices are (i) a preference for informal arrangements with communities, (ii) strategic use of discretionary powers to nudge interventions in desired directions, and (iii) seeking negotiated solutions rather than sticking to plans and rulebooks. These practices are partly shaped by the histories and dynamics of African state-society relations (Bierschenk and Olivier de Sardan, 2014; De Herdt and Olivier de Sardan, 2015), but they also contain elements evident elsewhere. The implementation dilemmas and the use of discretionary practices discussed here resonate with those found in studies of "street level" bureaucrats in otherwise very different governance contexts - e.g. the US (Lipsky, 2010), Sweden (Sevä and Jagers, 2013) and Vietnam (Christoplos et al., 2017).

Importantly, we are not suggesting that interface bureaucrats should be considered entirely free agents in climate interventions, or that they are disconnected from the central state (Zenker, 2018). Nor are they necessarily entrepreneurial heroes working to change the system. As the literature on "institutional work" has shown, the creativity and discretion of organizational actors may be employed to invoke change, but it may also form part of efforts to safeguard institutions from external threats, or simply find practical solutions to getting the job done (Lawrence et al., 2011; Smets and Jarzabkowski, 2013). Interface bureaucrats in our study sites often exhibited a distinct interest in fostering positive change in the areas where they worked, but it was

always clear that the state – and thereby they themselves – should play a key role. Rather than attempts to revolutionize climate interventions or undermine the central state, their informal practices should be understood as pragmatic efforts to carry out the job of exercising governance whilst negotiating a range of constraints, pressures and expectations and sustaining personal roles and interests.

Our argument however is that this pragmatism – and its effects – has important implications and deserves more attention in critical research on climate interventions specifically, and environmental governance more broadly (Furlong et al., 2017). Studies of environmental governmentality have shown how seemingly inclusive approaches can be an effective means of enrolling subjects in external discourses and making them discipline themselves (Death, 2016; Green and Lund, 2015). We agree but suggest that more emphasis is afforded to the role and effects of pragmatism and compromise in such modes of governance. On the one hand, such pragmatism can help defuse resistance and thereby extend efforts to govern (Cleaver, 2018; Li, 2005). On the other hand, it reshapes interventions, opens space for maneuver and can lead to unintended outcomes as discussed here. Understanding such processes of compromise and co-production can help shed greater light on how everyday environmental governance works (Cornea et al., 2017), and the implications this has for global and national agendas and interventions.

As we have argued here, such analysis must include attention to how interface bureaucrats and other practitioners employ discretionary space and pragmatism in environmental interventions. This is relevant not only from an academic perspective, but also in more normative terms. The 2018 IPCC Report on Global Warming suggests the need for a "whole of government" approach to climate action, in which all levels of scale are given attention (IPCC, 2018, p. 4/63). For such an approach to work, it must understand and take seriously not only formal policies and organizational arrangements, but also the informal and often hidden work of the actors who operate at the intersections of climate governance, such as the interface bureaucrats discussed here. The outcome of their work is not inherently good nor bad, but the point is that it makes a difference and must therefore be taken into account when developing mechanisms for climate governance and understanding their progress.

Declaration of interest

None.

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